

Missouri Department of Natural Resources

TANK WISE

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New Tier 1 Risk-Based Target Levels

by Tim Chibnall, Environmental Specialist, Remediation Unit

In February the Missouri Department of Natural Resources published guidance pertaining to the Missouri Risk-Based Corrective Action (MRBCA) process for petroleum storage tanks. The guidance then and now includes Tier 1 Risk-Based Target Levels (RBTLs) for the vapors from soil to indoor air and vapors from groundwater to indoor air pathways (collectively referred to as the "vapor pathways"). When the guidance was published, several external stakeholders involved in development of the MRBCA process were concerned that the Tier 1 RBTLs for the vapor pathways were far too conservative.

In response to these concerns, the department asked that those members of the MRBCA development stakeholder group most concerned with the vapor pathway RBTLs participate in a vapor subgroup. Working with this subgroup, the department determined that the Tier 1 RBTLs for the vapor pathways were very low because the fate and transport parameter inputs used in developing them were reflective of a relatively clean sandy soil. While Missouri certainly has some sandy soils, clay soils are much more prevalent in the state. In light of this fact, the department proposed to calculate new RBTLs based on specific soil types (including sandy soils). Whereas the February 2004, guidance allowed consideration of soil type beginning at Tier 2, this proposal would allow MRBCA users to consider soil type, albeit in a more generic fashion, at Tier 1. The vapor subgroup agreed with this proposal.

With the exception of a few minor details, the department has now developed new soil type specific Tier 1 RBTLs. The new RBTLs are based on three soil types: sandy, silty and clayey. These are referred to as Soil Type 1, Soil Type 2 and Soil Type 3, respectively. The soil types were developed using Natural Resources Conservation Service (formerly Soil Conservation Service) soil taxonomy data.

With the new RBTLs, at Tier 1, MRBCA users will have to identify the specific soil type at their site accurately and very early in the site characterization process. The department is currently developing detailed guidelines for determining soil type. However, the overall premise is to determine which of the three broad soil types is representative of the specific soils

found at a given site. For instance, any one or a combination of a sand, loamy sand or sandy loam would be considered Soil Type 1; a silt, silty clay loam or silt loam would be considered Soil Type 2; and a clay, silty clay or sandy clay would be considered Soil Type 3.

The department has assigned total porosity and volumetric water content values to each soil type. Because the values for these parameters vary significantly between the three soil types, the soil type specific RBTLs also vary significantly. While the department developed the new Tier 1 RBTLs primarily to address overly conservative vapor pathway RBTLs, the process results in changes to both soil and groundwater RBTLs for all of the exposure pathways.

In some cases, the new Tier 1 RBTLs are significantly higher than those found in the February 2004 MRBCA guidance document.

However, they are no less protective. The new RBTLs arise from using more realistic default fate and transport parameter values at Tier 1, rather than only at Tier 2, of the MRBCA process. Further tailoring of RBTLs based on site-specific geotechnical data will still be permitted at Tier 2.

The department anticipates releasing the new soil type specific Tier 1 RBTLs by early 2005. Guidelines for determining soil type as well as instructions on how to use the new RBTLs are under development and will be released shortly thereafter. Both the guidelines and instructions will be incorporated into the guidance document.

Questions regarding development of the soil type specific Tier 1 RBTLs should be directed to Tim Chibnall of the tanks section at (573) 751-6822 or 1-800-361-4827.

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An Alternative, Tiered Approach to Tank Closures Using Missouri Risk-Based Corrective Action (MRBCA) Process

by Kevin Thoenen, Closure Unit Chief

Since its implementation in February 2004, there have been several changes made in the way the MRBCA guidance document is used to close underground storage tank sites. One of the biggest changes is a new alternative, tiered approach to the tank closure process.

The MRBCA guidance uses the Default Target Levels (DTLs) to determine the clean up levels during tank closures. The DTLs are “walk away” numbers that do not require the evaluation of exposure pathways for identified receptors. If the soil concentrations for all of the chemicals of concern (COCs) are below the DTLs, and you have provided all of the required tank closure documentation, the Missouri Department of Natural Resources will issue a “no further action” letter for the property. However, the department recognizes the DTLs were generated using the most conservative levels in the Tier 1 Risk Based Target Levels (RBTLs) for a residential setting and are more conservative than the previous clean fill standards outlined in Table 3-1 of the March 1996 Closure Guidance Document (CGD). Therefore, gaining a “no further action” letter at tank closure has proven to be more difficult with the MRBCA guidance than with the CGD.

As a result, the department, with input from the Petroleum Storage Tank Insurance Fund (PSTIF), has developed an alternative procedure by which closure sample results could be compared to the Tier 1 tables in Chapter 7 of the MRBCA guidance. The intent of the alternative procedure is to assist site owners and their consultants in understanding the basic principles of the MRBCA guidance and using these principles to gain a “no further action” letter more rapidly with less outlay. The flow chart on the opposite page represents the decision-making process by which underground storage tank sites can gain a “no fur-

ther action” letter using the Tier 1 RBTLs as the clean up goals.

The comparison of each soil concentration from the sampling conducted at closure to the Tier 1 RBTLs evaluates the risk for inhalation, ingestion and dermal contact of the applicable chemicals of concern (COCs) remaining in the soil at an UST site. In addition, comparing each soil concentration to the levels in Table 4-1 will evaluate the risk resulting from the possible migration of any COCs into the groundwater at the site.

During initial discussions, the PSTIF noted the most important pieces of information necessary for a tiered approach included land and groundwater use for the property along with the representative concentrations for the chemicals of concern. The current and future land use along with the possibility for the domestic consumption of groundwater can usually be documented with relatively little up front costs. However, a full site characterization can get very costly, and the samples collected during the closure process are not intended to generate the representative concentrations necessary for comparison to the Tier 1 clean up goals. Further discussions with the PSTIF resulted in agreement that the closure soil concentrations would represent the worst conditions at the site from a petroleum impact standpoint. Therefore, if each soil concentration (not representative concentrations) is below the appropriate Tier 1 RBTLs and below the appropriate concentrations in Table 4-1, it is rational that the representative concentrations for subsurface and surficial soil would be below the respective Tier 1 RBTLs. As a result, further evaluation of the soil and groundwater at the site is not necessary, and you are ready to request a “no further action” letter from the department.

If a closure soil sample result shows a concentration above the Tier 1 RBTLs for any COCs, a risk assess-

ment for the property may eliminate the pathway by which the COCs may reach a receptor. But, if the domestic consumption of groundwater pathway is determined to be incomplete, each soil concentration must still be compared to the appropriate concentrations in Table 4-1 to evaluate the protection of the indoor air from groundwater vapors. In all cases, detailed documentation must be submitted to justify an incomplete pathway. Please note that in the absence of durable activity use limitations (AULs), an incomplete pathway for current land use may be determined to be complete for future land use. For this reason, the department will evaluate documentation submitted in support of future land use predictions and determine whether the documentation adequately supports the prediction.

If the risk assessment identifies a completed pathway and a soil concentration exceeds the Tier 1 RBTLs for that pathway, a complete characterization of the soil and groundwater at the site is necessary. However, if the risk assessment results in no completed pathways or if each soil concentration is below the Tier 1 RBTLs for the completed pathways, further evaluation of the soil and groundwater is not necessary, and you are ready to request a “no further action” letter from the department.

In the case where each soil concentration is below the Tier 1 RBTLs but above the concentrations in Table 4-1, a groundwater investigation is required for the site. The same is true if more than 200 cubic yards of native soil is excavated at a site. A groundwater investigation is also necessary when the groundwater in the tank pit contains concentrations of any COCs above the Tier 1 RBTLs for that groundwater (see Section 4.4.3 of the MRBCA guidance for the definition of groundwater). If the groundwater

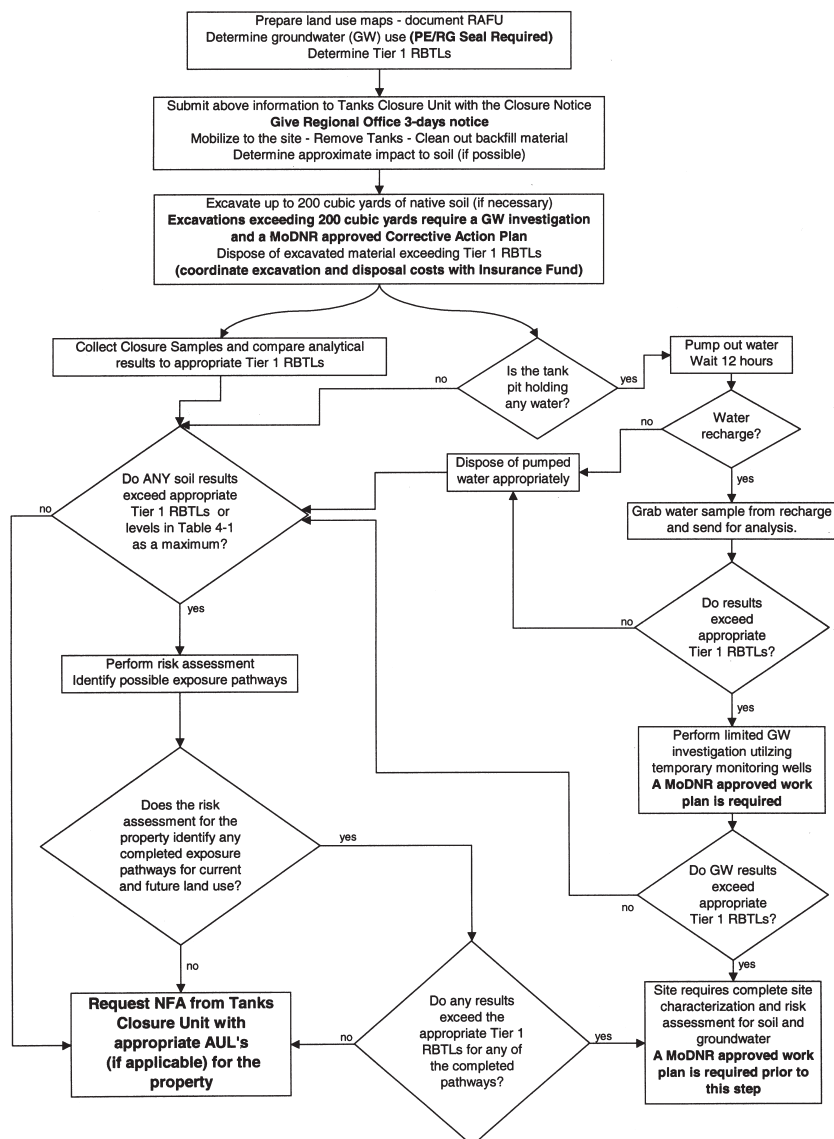
An Alternative, Tiered ...

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investigation from any of these scenarios reveals a water concentration above the Tier 1 RBTLs, a complete characterization of the soil and groundwater at the site is necessary. If each groundwater concentration at the site is below the Tier 1 RBTLs, and each soil concentration is below the Tier 1 RBTLs and Table 4-1, again, you are ready to request a "no further action" letter from the department.

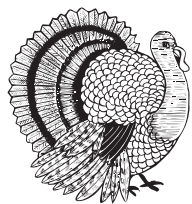
As you can see, the alternative approach is not a straightforward substitute for the closure of USTs using the DTLs as the clean up goals for a site. However, it does provide some relief from extensive corrective action as a result of contamination above the DTLs discovered during tank closures. The department developed the flow chart to assist tank owners and operators and their consultants to better understand the proposed, alternative process. If you have any questions or comments regarding this alternative approach, please contact Kevin Thoenen of the Hazardous Waste Program, Tanks Section, P.O. Box 176, Jefferson City, MO 65102-0176, or by calling at (573) 751-6822 or 1-800-361-4827.

MRBCA Tier 1 Tank Closure Flow Chart



Happy Holidays!

by Gene Nickel, Environmental Engineer, EAO



Although Thanksgiving is past, we hope it was both a pleasant and a safe one for you. We all have much to be thankful for in this great country of ours. The department would also like to extend its best wishes to all of you for a happy holiday season!

At the same time, we would like to extend a helping hand to you. If we

can be of help or provide environmental assistance in any way, please contact us at 1-800-361-4827. Through this 800 number you can reach any of the department's regulatory programs in the Jefferson City area or the regional offices across the state. Central office staff and the regional office inspectors are very knowledgeable and are



happy to help you with UST or compliance related questions. Also, at this same number, you can reach the Environmental Assistance Office (EAO) which is a non-regulatory office that can assist you with any of your environmental issues. So please call if you need help.

Happy Holidays!



Record Keeping for Release Detection – Part 2. Inventory Control

by Heather Markwell and Chris Veit, Environmental Specialists, Tanks Enforcement Unit

Inventory control requires the daily measurement of tank contents and mathematical calculations to compare the measured inventory to the “book” inventory. The book inventory is the inventory you should have in the tank as determined by product dispensed out of and deliveries made into the tank. The process is called “reconciling” because you must compare your measured inventory to the book inventory at the end of each month to determine if there is a leak in the tank. Inventory control must be used in combination with tank tightness testing. A sample inventory control worksheet is included on page 5 of this newsletter to help make the following explanation clearer.

1. Tanks must be measured at least once daily. Readings should be done at approximately the same time everyday. To obtain the best results, measure the tanks each day prior to store opening.
2. Measurements must be read to the nearest one-eighth inch. This requires that your measuring stick be marked and readable to the nearest one-eighth inch. Worn or broken sticks must be replaced immediately in order to maintain accuracy and prevent skewed results at the end of the month.
3. Inventory control requires a tank chart that converts the stick readings to gallons. After taking the tank reading, the reading must be converted to gallons to complete the reconciliation.
4. These measurements must be recorded and reconciled daily with the book inventory. Attached for your convenience is a sample monthly inventory record sheet to use to properly document your inventory control.
5. The changes in inventory must be calculated every month. The gallons over or short must be determined. If this number is greater than 1 percent of the flow

through the tank plus 130 gallons, a possible leak is indicated. (See the enclosed sample form for help with this calculation).

6. If your total gallons over or short exceeds the leak check number for 2 months in a row, you must contact the department’s spill line at (573) 634-2436 and follow the procedures for release investigation and confirmation.
7. The tank is required to have a drop tube that extends to within one foot of the bottom of the tank. Drop tubes help ensure more accurate readings.
8. At least once each month, you must check for water in the tank. This is done by smearing a water finding paste along the bottom of the measuring stick when conducting your daily measurements.
9. You should measure the tank prior to and five minutes after a delivery of product is made into the tank. This will confirm the amount of product delivered into the tank. The accuracy of this number can affect your inventory reconciliation.
10. A tank tightness test is also required every five years. The tank tightness test must be performed in accordance with all applicable federal and state regulations.
11. All records of calibrations, maintenance and repairs to the system equipment must be maintained for at least one year. Any schedules of required calibration and maintenance provided by the manufacturer must be retained for five years from the date of installation.

Please note, inventory control is a temporary leak detection method. It may only be used for ten years after a new tank installation or for ten years after the tank was upgraded to comply with the 1998 corrosion protection requirements, whichever is later. After this timeframe, inventory control will

no longer be accepted as a valid release detection method.

Owners and operators must keep the required records either at the UST site, immediately available for review, or at a readily available alternate site, and be provided to the department upon request within three working days or five calendar days. (Please note, if the owner or operator fails to produce these documents within the required timeframe, the department may mandate the retention of the records at the UST site.) The tests, and corresponding inventory reports, must be retained for at least 12 months. The more organized the reports are, the easier and faster an inspection can be performed.

This document is not meant to be all-encompassing. If you have questions about the correct use of inventory control at your facility, please contact the department’s tanks compliance and enforcement unit at (573) 751-7560 or 1-800-361-4827 or the Environmental Assistance Office at the same 800 number.

Furthermore, additional information on the use of inventory control and tank tightness testing may be found at the following Internet locations:

- ◆ EPA’s release detection guidance: <http://www.epa.gov/swrust1/ustsystem/leakdet.htm>
- ◆ EPA’s Doing Inventory Control Right for Underground Storage Tanks: <http://www.epa.gov/swrust1/pubs/doing.htm>

A departmental guidance document concerning release detection for underground storage tanks, publication #151, may be obtained by calling the Environmental Assistance Office at 1-800-361-4827. This publication costs \$1. Other UST related documents can be accessed at the department’s Web page: <http://www.dnr.mo.gov/oac/pubs.htm#HazardousWaste>.



MONTHLY INVENTORY RECORD

TANK IDENTIFICATION & TYPE OF FUEL: _____

MONTH/YEAR : ____/____

FACILITY NAME: _____

DATE OF WATER CHECK: _____ LEVEL OF WATER (INCHES): _____

DATE	START STICK INVENTORY (GALLONS)	GALLONS DELIVERED	GALLONS PUMPED	BOOK INVENTORY (GALLONS)	END STICK INVENTORY		DAILY OVER (+) OR SHORT (-) ["End" - "Book"]	INITIALS
					(INCHES) ▶	(GALLONS)		
1	(+)	(-)	(=)					
2	(+)	(-)	(=)					
3	(+)	(-)	(=)					
4	(+)	(-)	(=)					
5	(+)	(-)	(=)					
6	(+)	(-)	(=)					
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28	(+)	(-)	(=)					
29	(+)	(-)	(=)					
30	(+)	(-)	(=)					
31	(+)	(-)	(=)					

TOTAL GALLONS PUMPED >

TOTAL GALLONS OVER OR SHORT >

DROP THE LAST 2 DIGITS from the TOTAL GALLONS
PUMPED number and enter on the line below
LEAK CHECK: _____

+

130

=

Compare these
gallons

numbers

Is "TOTAL GALLONS OVER OR SHORT" LARGER than "LEAK CHECK" result? YES NO (circle one)

If answer is "YES" for 2 MONTHS IN A ROW, notify regulatory agency as soon as possible.

KEEP THIS PIECE OF PAPER ON FILE FOR AT LEAST 1 YEAR

Tanks Section Employees Receive Awards

CONGRATULATIONS to Fred Hutson and Tim Chibnall. Fred and Tim were recognized as the Department of Natural Resources'



Fred Hutson and Tim Chibnall

September Employees of the Month. They were nominated for this honor by John Balkenbush, the tanks section chief. Fred is an Environmental

Specialist IV and is the unit chief of the remediation unit. Tim is an Environmental Specialist III in the tanks remediation unit.

Fred and Tim were nominated for this honor for their efforts in developing and implementing the new underground storage tank (UST) risk-based corrective action (RBCA) process. This two-year effort represents the future of Missouri's UST closure and clean-up program.

This project is extremely high profile and has involved more than 50 stakeholders representing significant business, technical, investment, regulatory, political and environmental interests. Fred and Tim have worked diligently to identify and address issues associated with developing the 300 plus page guidance document. Threats from contamination at UST sites will now be addressed more quickly and with more scientific certainty than ever before, while minimizing costs to the citizen's of Missouri. Their exceptional performance and hard work shows their dedication to the Missouri Department of Natural Resources. Thank you, Fred and Tim!

New Protocol for Soil Vapor Monitoring

by Tim Chibnall, Environmental Specialist, Remediation Unit

As explained in the MRBCA guidance, evaluation of the vapors from subsurface soil to indoor air exposure pathway and the vapors from groundwater to indoor air exposure pathway is a necessary component of assessing risk associated with petroleum contamination. The guidance explains the evaluation process for these pathways as follows:

- ◆ Compare representative soil and groundwater concentrations to the Tier 1 Risk-Based Target Levels (RBTLs);
- ◆ If the Tier 1 RBTLs are not exceeded, the pathways require no further evaluation. If the Tier 1 RBTLs are exceeded, proceed to Tier 2;
- ◆ At Tier 2, develop Site-Specific Target Levels (SSTLs) for the vapors from soil to indoor air and vapors from groundwater to indoor air exposure pathways;
- ◆ Compare representative soil and groundwater concentrations to the Tier 2 SSTLs. If the Tier 2 SSTLs are not exceeded, the pathways require no further eval-

uation. If the Tier 2 SSTLs are exceeded, conduct soil vapor monitoring.

Soil vapor monitoring is a process by which sampling points are installed in the subsurface near a real or hypothetical structure for the purpose of collecting soil vapor samples. The soil vapor sampling data is used to determine whether concentrations of chemicals of concern (COCs) in vapors from soil or groundwater sources pose an unacceptable threat to receptors within a structure. Appendix C of the MRBCA guidance document contains general information regarding soil vapor monitoring.

Since implementation of the MRBCA process in February 2004, the department has determined, based primarily on communications with the consulting community, that the soil vapor monitoring guidance in Appendix C is lacking both in scope and depth. Therefore, the department has tasked a contractor with developing standard operating procedures (SOP) for soil vapor monitoring that are more comprehensive and detailed

than the guidance currently found in Appendix C.

The new SOP will include provisions for conducting tracer testing during vapor sample collection. Tracers are volatile chemicals not routinely detected in the environment that may be used during soil vapor monitoring to ensure sample integrity. A detection of the tracer compound in the vapor sample indicates that the sample did not come solely from subsurface soil. Such samples are not useful for risk assessment.

The new soil vapor monitoring SOP is currently being developed and should be available for general use by the end of 2004. The new SOP will standardize and elaborate on procedures for conducting soil vapor monitoring, thereby ensuring that vapor data is of a consistent quality and is comparable from site to site.

Questions regarding the new soil vapor monitoring SOP should be directed to Tim Chibnall of the tanks section at (573) 751-6822. The tanks section may also be reached by calling 1-800-361-4827.

2004 National Brownfields Convention

by Rick Brown, Planner, Planning & Registration Unit

The Ninth Annual National Brownfields Convention was held in St. Louis Sept. 20-22.

This was the second convention since President George W. Bush signed federal brownfields legislation. Every year, several non-profit organizations and federal agencies with a stakeholder interest in brownfields redevelopment assist with the planning, marketing and facilitation of the national brownfields conference. The Missouri Department of Natural Resources was one of the co-sponsors of the event this year.

This annual convention provided a forum for interactive discussions, educational presentations, and plenty of networking opportunities with business, government and nonprofit organizations working at the forefront of brownfield redevelopment. There were numerous mobile workshops and walking tours that enabled participants to learn about regional brownfield success stories in an interactive setting. These off-site ses-

sions included an in-depth analysis of specific case studies and valuable ideas that might be applied in other communities and redevelopment areas.

Another highlight was the free forum that brought together developers and brownfields site owners to establish connections and promote redevelopment deals. There were approximately 4,000 participants at the convention. The department's Brownfields/Voluntary Cleanup Program provided many speakers at the various technical sessions and also staffed a booth at the convention. A new backdrop that was



developed especially for this convention debuted and received great reviews. It featured a downtown redevelopment site as it progressed from start to finish. Helping staff the booth were Kevin Thoenen and Rick Brown from the tanks section. For more information, please visit the convention Website at www.brownfields2004.org.

Tank Factoids

by Betty Finders, Planning and Registration Unit Chief

The tanks section of the Missouri Department of Natural Resources' Hazardous Waste Program (HWP) regulates underground petroleum storage tanks (USTs) and the remediation of contamination caused by a release from these tanks. There are approximately 10,202 active underground storage tanks located in Missouri with 1,622 ongoing cleanups. During the fiscal year, which ended June 30, the department completed 96 site cleanups at petroleum contaminated sites.

UST systems that do not meet the 1998 upgrades and that have been temporarily out of service for more than 12 months must be properly closed. Closure means to permanently remove the UST from the ground or close it in place. Both methods require prior notification. The closure process occurs when an owner or operator

removes a UST system including piping. In FY04 the tanks section reviewed 185 closure notices and 184 closure reports, and closed 340 tanks. The closure unit is currently working on 315 facilities. 27,688 registered tanks are now closed.

Excellent planning and execution on the part of the department's regional office staff resulted in the completion of 1,564 inspections at UST facilities during FY04. Regional offices referred 61 UST facilities to the HWP for enforcement action in FY04 and enforcement staff resolved 32 cases. The tanks enforcement section currently has 279 active enforcement cases, 16 of which have been referred to the Attorney General's Office for litigation during FY04.

Petroleum underground storage tank owners and operators are also

required to have the funds to pay for the cleanup and other damages that may occur from a release from their UST systems. Of the 3,771 regulated facilities with active USTs 3,275 facilities have met the financial responsibility requirements.

The department issues certificates of registration to facilities that have demonstrated the specified requirements. In order to receive a certificate a facility must have a current financial mechanism in place, have paid registration fees for the USTs, and have met the requirements for both the 1998 upgrades and leak detection equipment. No enforcement action can be pending. The department must also have completed a compliance inspection at the facility within the last three years. A total of 457 certificates of registration were issued in FY04.

Good Things Take Time

by John Balkenbush, Tanks Section Chief

February 2004 marked a new direction for practitioners of underground storage tank cleanups in Missouri. Of course I'm referring to the introduction of MRBCA: Missouri Risk-Based Corrective Action. Revolutionary new guidelines for the remediation of petroleum contamination that has ushered in a new era of more thoughtful, economical and scaled cleanup approaches. MRBCA is not a new concept, but its application in Missouri is new and is the result of several years' collaboration between outside stakeholders and the Missouri Department of Natural Resources.

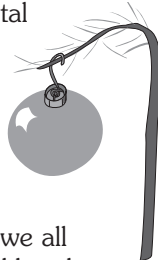
In a nutshell, MRBCA differs from the traditional and costly "dig-and-haul" cleanup by only removing contamination to the extent necessary to reduce risk to acceptable levels given current and future land use, and by limiting activities or uses which could bring persons into contact with remaining contamination. When you think about it, this approach makes common sense, however, in exchange for leaving contamination, more information is necessary to fully characterize the toxicity and extent of contamination. This usually costs more money initially, but because the result is a clearer, more thorough evaluation of risk, many sites can be closed with previously unacceptable levels of contamination left in place. Under MRBCA, some sites that we could not

previously close, may now be returned to a level of appropriate and productive use.

The foregoing paragraphs are just the thumbnail sketch. The "real" MRBCA guidance is more than 300 pages long and packed with technical jargon, appendices, and forms. As a result, there has been a steep learning curve for everyone affected by it. The training process began even before MRBCA was released to the public, and continues on a lesser scale today.

While tank owners and operators need to know what MRBCA is and what options it offers to rehabilitate their sites, environmental consultants and department technical staff had to get up to speed completely and quickly. When MRBCA was first unveiled to the public, we all envisioned a flood of old tank sites closing within months. Nine months into the implementation, we are just now starting to see significant results.

When MRBCA was first released, the department allowed a several month window to complete closures and cleanups under the old 1996 guidance. Many people who were already progressing under the old guidelines chose to finish under them. Still others "changed horses in midstream"



because they could foresee site conditions that might never be satisfactorily addressed under the old guidance, but which could be resolved with MRBCA. During this period, many consultants and even some department staff, were focused on closing sites under the old guidance, and didn't really get into the details (and complexity) of MRBCA until later. Now that has changed. Through training and regular interaction between department staff and the consulting community, we are now reaching a broader understanding of how to use MRBCA most effectively.

With better understanding comes an improved quality in the reports and work plans submitted to the department, ultimately resulting in decreased review and comment time, and more sites remediated. The vision is beginning to materialize – momentum is building and sites are being closed more quickly and, in time, more cheaply.

MRBCA is a new way of doing business, with a rationale and language of its own. A dozen years ago, the same could be said about personal computers – now they are conspicuous by their absence, and few people question their utility or effectiveness. With your help we will realize the full potential of MRBCA, and the people of Missouri will reap the benefits.

It's true, good things really do take time.

Department of Natural Resources Tanks Database Now Available

by Betty Finders, Planning and Registration Unit Chief

Several months ago, the department made a new tanks database available on the Internet and then had to remove it due to technical difficulties. This new summary database is now available again at the following address: <http://www.dnr.mo.gov/alpd/hwp/download.htm>. The download, which is updated monthly, includes information on locations of facilities, types and sizes of tanks,

owner information, closure status and remediation files in a new, convenient, menu-driven application. Users will need unzip software (such as WinZip) to open the downloaded file, as well as database management software that can open or import Microsoft Access 97 databases.

This database is part of the department's efforts to provide convenient access to tank facility records. We

anticipate users will find a number of uses for the new system including:

- ◆ searching for registered UST sites;
- ◆ finding the file numbers for a facility record;
- ◆ reviewing information about active tank facilities;
- ◆ verifying tank information;

(continued on Page 9 ...)

Department of Natural Resources Makes Tanks Database Available

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- ◆ reviewing closure information
- ◆ and locating information on the status of tank remediation projects

We hope that this new download will help answer many common questions that previously could be answered only by tanks section staff. Of course, we expect that in the process of answering one set of questions, new questions will arise. For instance, we anticipate that access to the data will

provide improved information about apparent inaccuracies in our current tank data (for example, details on types of tanks, whether the tanks are active or inactive, and types of equipment fitted to the tanks, etc). We look forward to inquiries as the data is reviewed.

Of course, the electronic data is still no substitute for the official record that exists on paper in files at our offices in Jefferson City. After you have deter-

mined a file number (that is, the "ST" and, if relevant, the "R" number), you may contact our records center at (573) 751-3043 to obtain a copy of the file or schedule a review. If you have questions about the database or its use, contact Betty Finders or Janet Roberts at the tanks section at (573) 751-6822 or 1-800-361-4827.

Kathy Flippin is New Compliance Enforcement Section Chief

On July 15 Kathy Flippin accepted the position as chief of the Department of Natural Resources, hazardous waste compliance/enforcement section. Sixteen years before, she began work with the department as an environmental specialist in the hazardous waste enforcement unit. Over the years, she managed enforcement cases, directed and oversaw hazardous waste cleanups, wrote regulatory guidance and provided assistance and training to the regulated community. In October 1995 she accepted the enforcement unit chief position. She attended the University of Missouri - Columbia and holds a bachelor of science degree in agriculture- natural resources from Lincoln University in Jefferson City. She also has more than

1,000 hours of training related to technical, compliance and enforcement issues.

Through the years, Flippin has been actively involved in regional office and program inspection planning, program strategic planning, regulation, procedure and grant development. She serves on multi-agency workgroups, and the Compliance and Enforcement Taskforce in the Association of State and Territorial Solid Waste Management Officials. Her current goals are to streamline inspection and enforcement activities in the interests of statewide efficiency and consistency and focusing on seeking compliance on the worst environmental problems first. She also hopes to provide more training and targeted



guidance to department staff and the regulated community.

Please join us in congratulating and welcoming Kathy to her new position. Congratulations Kathy!

Some Frequently Asked Questions

1. Is manual tank gauging going to be banned?

No. Manual tank gauging will continue to be allowed for monitoring tanks up to 1,000 gallons capacity.

2. Do I have to buy an automatic tank gauge (ATG)?

No. There are several options or methods for monitoring USTs. Every method has its advantages and disadvan-

tages. You need to choose the method and equipment that you are able to best use and that best fits your business because, in the final analysis, it will be up to you to make this equipment work properly.

3. Can I landfarm the contaminated soil from my used oil tank?

No. Landfarming is a method of cleaning up contaminated soil

that consists of spreading the soil into a relatively thin (8 - 12 inch) layer on top the ground, adding moisture and nutrient, then tilling the soil periodically to maintain aeration. Used oil can contain traces of heavy metals and other contaminants that will not break down or 'go away' when landfarmed.